

Quality of care for ischemic stroke in Québec's comprehensive stroke centers before and after initiation of a provincial action plan

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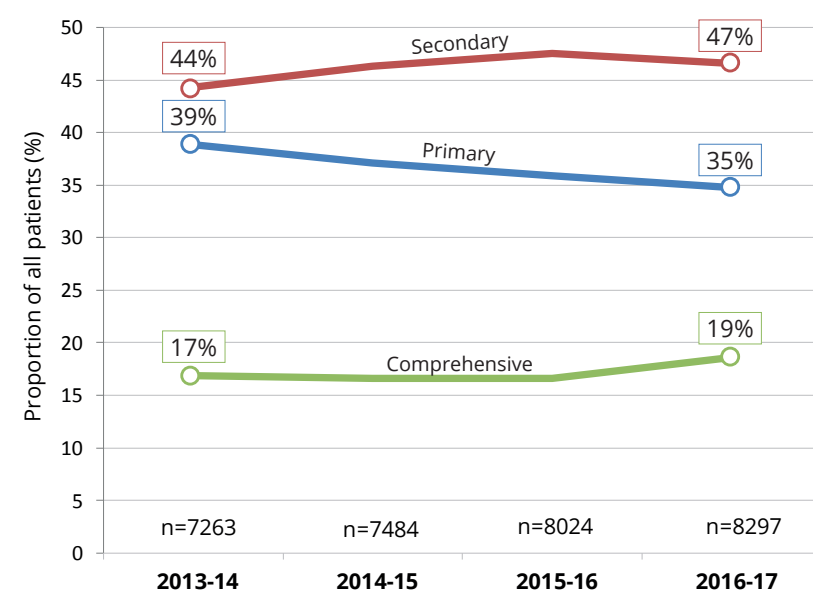
Background

Following a province-wide field evaluation (2013-14) of the quality of stroke care in Québec, a ministerial action plan was developed and implemented. The objectives of this plan were to reorganize stroke care, to introduce endovascular therapy (EVT) and to promote best practices. Herein, we compare treatment delays and quality of care (screening for dysphagia; admission to a stroke unit) in Québec's four comprehensive stroke centers before and after implementation of this initiative.

Methods

2013-14	2017-18
Hospital and patient selection	
All patients with hospital admission for ischemic stroke who arrived at the emergency room with symptoms at a comprehensive stroke center (n=4)	All patients who arrived at an emergency room with symptoms and were treated with t-PA (thrombolysis) or EVT at a comprehensive stroke center (n=4)
Data collection	
Review of medical chart by health information professional from INESSS	Review of medical chart and all other pertinent documentation by health information professional from INESSS in collaboration with the EVT clinical team
Data analysis	
All data were entered into a centralized secure website (REDCap) and analyzed by INESSS in collaboration with a committee of clinical experts	

Distribution of hospital admissions for ischemic stroke by type of center from 2013-14 to 2016-17

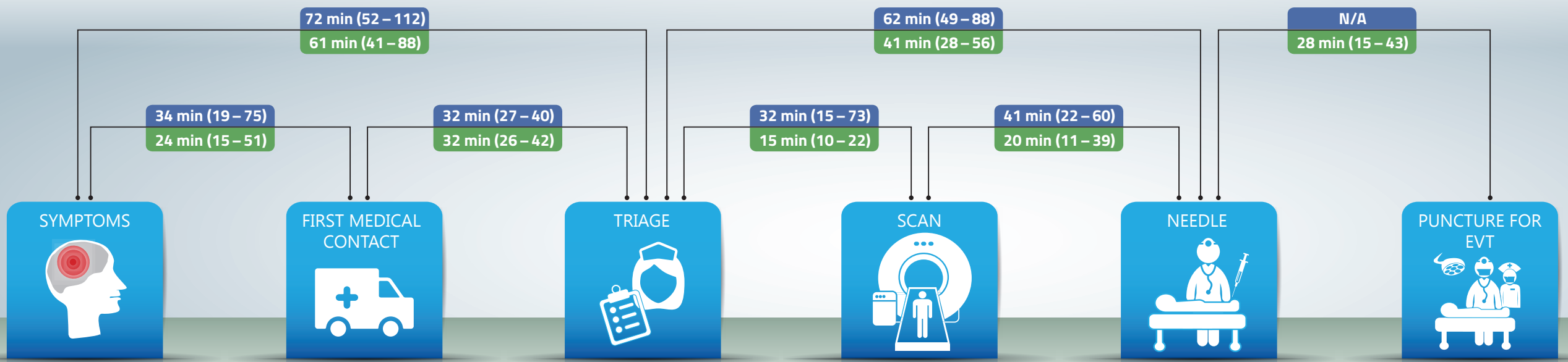


- ▶ The proportion of patients admitted to a secondary center with a stroke unit or to a comprehensive stroke center increased during the four years from 2013-14 to 2016-17.
- ▶ While the rate of hospital admission to primary care centers has decreased since 2013-14, in 2016-17 more than one-third of ischemic stroke patients were not admitted to a hospital with a stroke unit.

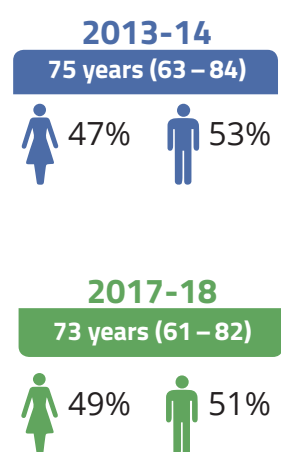
The distribution of hospital admissions by type of center was assessed using the most recently available medico-administrative data.

Delays within the trajectory of patients treated with t-PA or EVT in a comprehensive care center (2013-14 vs 2017-18)

Median (25th – 75th)
2013-14
2017-18



Patient characteristics

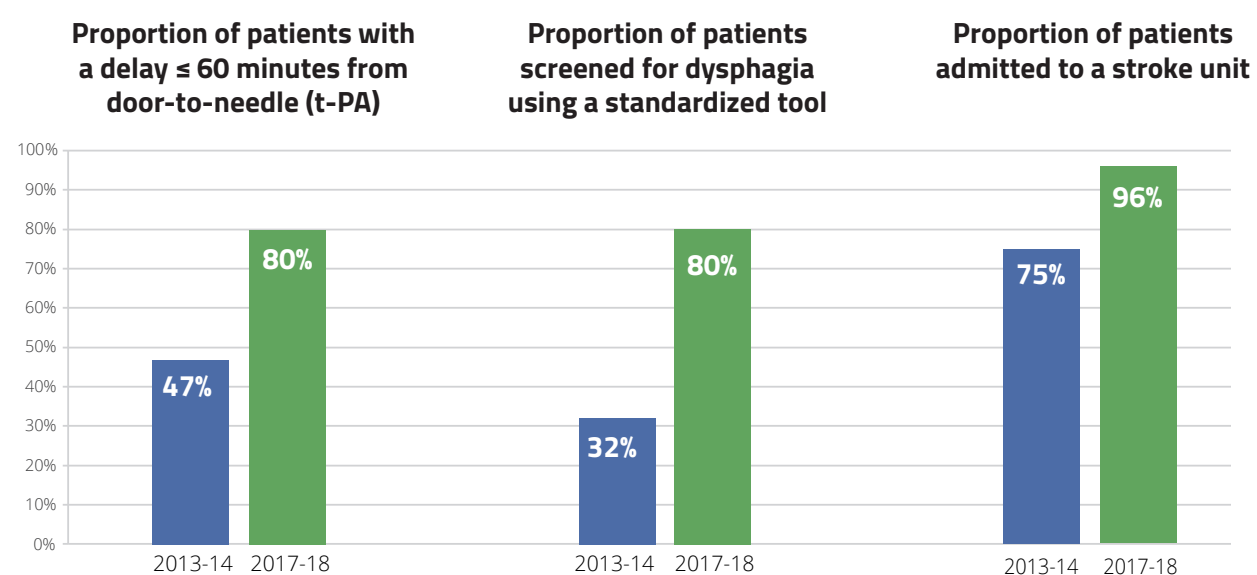


The median age of patients who received t-PA or EVT at a comprehensive stroke center in 2017-18 was only slightly younger than that of all admitted ischemic stroke patients who arrived at the emergency department of a comprehensive stroke center in 2013-14.

In both patient cohorts:

- ▶ more than one in four patients were over 80 years old;
- ▶ about half of patients were women.

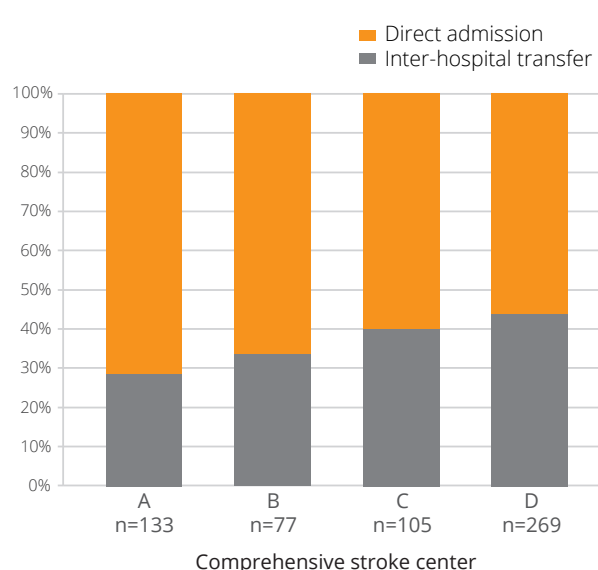
Quality indicators of ischemic stroke care (2013-14 vs 2017-18)



- In comparison with 2013-14, the proportion of patients in 2017-18:
- ▶ with a delay from triage to administration of t-PA ≤ 60 min increased from 47% to 80%;
 - ▶ screened for dysphagia using a standardized tool increased from 32% to 80%;
 - ▶ admitted to the stroke unit of the comprehensive care center increased from 75% to 96%.

Revascularization treatment in comprehensive care centers (2013-14 vs 2017-18)

Trajectory of patients treated with t-PA or EVT in a comprehensive care center by stroke care network (2017-18)



- ▶ In 2013-14, less than 10% of stroke patients underwent an inter-hospital transfer for treatment and there were no EVT programs.
- ▶ In 2017-18, 38% of patients in Québec who received a revascularization treatment (t-PA or EVT) in a comprehensive care center were transferred from another center.
- ▶ Across Québec's four stroke care networks, the proportion of transfer-in patients varied from 29% to 44%.

Revascularization treatment in comprehensive care centers (2013-14 vs 2017-18)

October to March (6 months)	Number of patients treated with t-PA ± EVT	Number of patients treated with EVT ± t-PA
2013-14	70	N/A
2017-18	155	169

In the 6-month period from 1 October to 31 March:

- ▶ The number of patients treated with t-PA in a comprehensive care center more than doubled from 70 in 2013-14 to 155 in 2017-18.
- ▶ The number of patients treated with EVT (± t-PA) increased from zero to 169.

Conclusion

The creation and implementation of a provincial action plan and the reorganization of stroke care in Québec has led to more ischemic stroke patients being optimally treated within recommended delays in comprehensive stroke centers.